

BEFORE THE
Federal Communications Commission
WASHINGTON, D.C. 20554

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OCT 16 1991

Federal Communications Commission
Office of the Secretary

In the Matter of)
)
Petition of American Mobile)
Satellite Corporation for)
Amendment of Parts 2, 22, and 25 of)
the Commission's Rules to Allocate)
Spectrum for the Mobile-Satellite)
Service)

RM-7806

To: The Commission

COMMENTS OF TRW INC.

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SUMMARY

In these Comments, TRW Inc. ("TRW") opposes the petition of American Mobile Satellite Corporation ("AMSC"), inter alia, to reallocate the 1616.5-1626.5 MHz band from the radiodetermination satellite service ("RDSS") to the domestic generic mobile satellite service ("MSS") and to have the reallocated frequencies assigned to AMSC. Grant of AMSC's petition and concurrently-filed applications to monopolize the 1616.5-1626.5 MHz bands would preclude all of the pro-competitive uses of the RDSS bands (i.e., the frequency bands at 1610-1626.5 MHz and 2483.5-2500 MHz) for the provision of RDSS and mobile satellite voice and data services that have been proposed by TRW and several other nongeostationary satellite system applicants. Only AMSC's interests would be served by such an allocation, while the public and national interests would suffer grievous injury.

TRW shows that there is no merit to any of AMSC's stated bases for its proposed reallocation of the 1616.5-1626.5 MHz band. Even assuming that AMSC possesses the legal competence to expand its proposed system, it has offered no support for its contention that the additional frequencies are required for domestic generic MSS services. If AMSC is correct in its claim that its originally-proposed 28 MHz system does not have enough spectrum to be viable, the Commission should investigate both the veracity of AMSC's claims concerning its originally-proposed system, and the efficiency of its proposed technology. An inefficient system should not be given

additional scarce spectrum when, as here, numerous spectrum-efficient systems would be denied the opportunity to operate.

AMSC's claim that its current proposal is spectrum efficient is specious. The fact that it would cost no more than \$10 million for AMSC to expand into the newly-proposed bands, even if true, has absolutely nothing to do with spectrum efficiency. Moreover, AMSC's attempts to compare its proposed system to the nongeostationary satellite systems proposed for the RDSS bands reveal the inefficiencies of AMSC's proposal. Global Positioning Service is not a substitute for the true RDSS services that are proposed by all of the other applicants, and the claim that a second generation of MSS satellites would be able to replicate the coverage beam and transceiver unit sizes of the present nongeostationary applicants fails to demonstrate the current spectrum efficiency of AMSC's proposed first generation system.

Finally, the fact that five applicants seek to provide RDSS services, in conjunction with mobile satellite voice and data services, means that the Commission will still be able to realize its stated objectives for the RDSS service. AMSC's generalized opposition to the waivers requested by two of these applicants fails to justify the grant of AMSC's request that the Commission permanently abandon the service.

The Commission should either reject AMSC's petition in its entirety, reevaluate the premise for its authorization, or require AMSC to select alternative frequency bands.

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To: The Commission

COMMENTS OF TRW INC.

TRW Inc. ("TRW"), by its attorneys and pursuant to Section 1.405 of the Commission's rules, hereby comments upon the above-captioned petition for rule making filed by American Mobile Satellite Corporation ("AMSC"). For the reasons stated below, TRW urges the Commission to reject AMSC's petition.

I. INTRODUCTION

In 1989, the Commission authorized AMSC to become the licensee of a domestic generic mobile satellite system that would operate in the 1545-1559 MHz and 1646.5-1660.5 MHz bands. In March 1991, the U.S. Court of Appeals for the District of Columbia Circuit vacated AMSC's authorization, and remanded the matter to the Commission. See Amendment of Parts 2, 22 and 25 of the Commission's Rules to Allocate Spectrum for and to Establish Other Rules and Policies Pertaining to the Use

of Radio Frequencies in a Land Mobile Satellite Service for the Provision of Various Common Carrier Services, 4 FCC Rcd 6041 (1989) ("MSS Licensing Order"), vacated in pertinent part and remanded, Aeronautical Radio, Inc. v. FCC, 928 F.2d 428 (D.C. Cir. 1991) ("Aeronautical Radio, Inc.").

In 1990, while its initial authorization was on appeal to the court, AMSC applied for authority to modify its domestic MSS system authorization to include non-exclusive rights to operate in an additional 40 megahertz of spectrum. See Application of AMSC for Authority to Operate in the 1530-1545 MHz and 1626.5-1646.5 MHz Bands (filed January 25, 1990). In June 1991, following the court's decision, AMSC filed its instant petition, requesting the Commission to expand AMSC's proposed L-Band system from 63 megahertz to 83 megahertz by adding 20 megahertz of spectrum in the 1515-1525 MHz and 1616.5-1626.5 MHz bands. In conjunction with its June 1991 Petition, AMSC has applied for authority to modify its pending domestic MSS system application to include authority to construct facilities and operate in the newly-proposed frequency bands. See Application of AMSC Subsidiary Corporation for Modification of Space Station Authorization to Construct and Operate its Satellites located at 62° and 139° W.L. to add the 1515-1525 MHz (downlink) and 1616.5-1626.5 MHz (uplink) Bands, File No. DSS-MP/ML-91(2) (filed June 3, 1991) ("AMSC RDSS Band Application").

AMSC makes three arguments in support of its request for reallocation of the 1515-1525 MHz and 1616.5-1626.5 MHz bands to the domestic generic MSS. First, asserting that the spectrum is required for the Commission's domestic MSS service, AMSC claims that "the Commission's policy of licensing a viable MSS system to provide service to the United States is in serious jeopardy due to the shortage of L-band spectrum[]" and prior notification of AMSC's existing bands by foreign systems. AMSC Petition at 15. Second, AMSC contends -- even though it is still years away from commencing operation with its generic MSS system -- that it can use the additional spectrum efficiently, speculating that "the next generation of MSS systems will provide even greater spectrum efficiency." *Id.* at 18 (emphasis added). AMSC's third argument is that there is no point in preserving the Commission's RDSS allocation, at least in the 1616.5-1626.5 MHz band, noting that applications filed by Motorola Satellite Communications, Inc. ("Motorola") and Ellipsat Corporation ("Ellipsat") fail to conform to the Commission's RDSS rules. AMSC Petition at 19.

In these Comments, TRW urges the Commission not to eviscerate the competitive services contemplated by the applicants for the RDSS bands, as AMSC now asks. Obviously contrary to AMSC's own interests, TRW and several other companies have applied to use the Commission's entire RDSS band allocation to provide a combination of RDSS services of the

type contemplated by the Commission in establishing the service, and mobile voice and data services. It is possible that several of these proposed systems could operate in the 1610-1626.5 MHz and 2483.5-2500 MHz bands simultaneously, and all would provide services that are global (and not just domestic) in scope. Grant of AMSC's proposal to monopolize the 1616.5-1626.5 MHz band for its proposed generic MSS system would require the rejection of all of the other currently-pending proposals to construct systems that would use all or part of those frequencies.

Furthermore, AMSC provides no justification whatsoever for its assertion that its previously-proposed 63 megahertz system is insufficient to enable it to establish an economically viable system. Insofar as TRW and others have proposed satellite systems that would provide global mobile voice and data services in 33 megahertz of L-Band spectrum or less, AMSC's contention seems to beg for an inquiry into the wisdom of authorizing a single mobile satellite system that uses so much of the limited spectrum resource.

In short, assuming AMSC is re-authorized in the Commission's ongoing proceeding in Gen. Docket No. 84-1234 to build and operate a domestic MSS system in the 1545-1559 MHz and 1646.5-1660.5 MHz bands, the Commission should deny AMSC's attempt to expand into the RDSS bands as contrary to Commission policy and inimical to the public interest.

II. DISCUSSION

A. AMSC Has Provided No Support For Its Contention That The 1515-1525 MHz And 1616.5-1626.5 MHz Bands Are Needed For Domestic Generic MSS Services.

At the outset, and putting aside for the moment the fact that the court's decision in Aeronautical Radio, Inc. reverted AMSC to mere applicant status, TRW wishes to emphasize that AMSC is not "the United States MSS system." See, e.g., AMSC Petition at 1, 16 (emphasis added). Even in its MSS Licensing Order, the Commission authorized AMSC only to establish a domestic generic mobile satellite system, inter alia, in the 1646.5-1660.5 MHz bands; it neither precluded other types of systems from using those bands nor granted AMSC any right -- exclusive or otherwise -- to extend its proposed system outside of the bands for which it was initially authorized.

As a result, and notwithstanding its misconception about the exclusivity and extent of its former authorization, AMSC is not entitled to any preferential consideration whatsoever for its current proposal or attendant applications. Certainly, AMSC is not entitled to have any additional spectrum that may be allocated for mobile and mobile related services "assigned . . . to the U.S. MSS system." AMSC Petition at 1.

Even assuming arguendo that AMSC is legally competent to expand its system into the RDSS bands, the Commission should

nevertheless decline to adopt AMSC's proposal. If AMSC is correct in its assertion that the 1545-1559 MHz and 1646.5-1660.5 MHz bands do not provide sufficient spectrum for a single domestic generic MSS system to be viable (see AMSC Petition at 15), it would be irresponsible for the Commission even to consider allowing AMSC to expand into the adjacent 1530-1545 MHz and 1626.5-1646.6 MHz bands without undertaking a critical reevaluation of the veracity of AMSC's claims concerning its ability to operate in the initially-authorized 28 megahertz of spectrum, and of the efficiency of AMSC's proposed system. In no event should the proponent of an inefficient service or system proposal be allowed to expand its use of valuable and scarce spectrum further if state-of-the-art, significantly more spectrum-efficient systems are waiting in the wings for their opportunities.

Here, of course, there are a number of proposals, any of which require considerably less than the 83 megahertz of L-Band spectrum AMSC is now requesting for its proposed domestic system. TRW, Ellipsat, and Loral Cellular Systems Corporation ("Loral"), for example, each propose to establish multi/regional or global satellite systems capable of providing both mobile satellite voice and data services, in addition to radiodetermination satellite services, in only 33 MHz of L-Band spectrum.

Moreover, to the extent that AMSC's current proposal for the 1545-1559 MHz and 1646.5-1660 MHz bands faces coordination obstacles and conflicts with proposed foreign systems (see AMSC Petition at 7, 15), these difficulties stem from the fact that the Commission's domestic MSS allocation in those bands is inconsistent with the international allocations for all three International Telecommunication Union ("ITU") regions. See 47 C.F.R. § 2.106. Since the use of those frequencies by AMSC would not conform to the allocations established by the ITU, AMSC must accept all interference from, but not cause harmful interference to, systems that are using the frequency bands in ways consistent with the international allocations. See ITU Radio Regulation 342. AMSC was aware of the inconsistency between the U.S. allocation and the international allocation in 1987 (following the Mobile WARC held that year). In 1988, AMSC applied for the spectrum with full knowledge of the potential shortcomings of the allocation. AMSC cannot now be allowed to cite those shortcomings in an attempt to expand out of a frequency allocation that fails to afford it the level of operational flexibility it belatedly claims to require.

AMSC repeatedly asserts that there is an immediate shortage of spectrum available for mobile satellite services. See, e.g., AMSC Petition at 6, 16. However, it fails to provide any evidence of this claimed shortfall, or to show that

any excess demand could not be accommodated by systems providing mobile voice and data services in other frequency bands -- i.e., by systems providing "Mobile-Enhanced RDSS" services in the RDSS bands (as proposed in TRW's Petition for Rule Making).

In short, AMSC's claims that the domestic generic MSS frequencies it was initially authorized to use are insufficient for its purposes fail to justify reallocation of the 1616.5-1626.5 MHz band to the domestic generic MSS. If anything, they call for a reevaluation of whether AMSC's initial proposal remains in the public interest -- particularly given the licensing issues which remain contentious at best. The Commission should not render the RDSS bands incapable of use by all other systems simply to enable AMSC to expand away from a suspect allocation it knowingly applied for and was granted.

**B. There Is No Substance Whatsoever To AMSC's
Contention That Its Allocation Proposal For The
1616.5-1626.5 MHz Band Is Spectrum Efficient.**

AMSC's contention that its proposed expansion into the RDSS bands (at 1616.5-1626.5 MHz) would constitute an efficient use of the spectrum is based on considerations that have absolutely nothing to do with the public interest. Essentially, AMSC asserts -- without supporting documentation -- that its proposed allocation is spectrum efficient because

it would add only \$1 to \$10 million in incremental costs to each of the two AMSC proposed spacecraft that would be modified with the additional frequency capabilities. See AMSC Petition at 16.

The Commission should not entertain the notion of allowing generic MSS systems to operate in the RDSS bands simply because it may be economically expedient with respect to one applicant's pending proposal. If AMSC's proposed allocation at 1616.5-1626.5 MHz is adopted, none of the other five members of the June 3, 1991 processing group would be able to implement their proposals as planned. The loss of what may be several new satellite systems providing the RDSS services the Commission has long held to be in the public interest, not to mention the loss of global mobile satellite voice and data services for which significant consumer and business sector demand exists, is far too high a price to pay for AMSC's alleged incremental cost savings -- even if they were substantiated.

The basis for AMSC's claim erodes further when it is recalled, as AMSC itself has noted, that the U.S. proposals for the upcoming World Administrative Radio Conference include recommended MSS allocations in a number of frequency bands separate from the co-primary allocation (with RDSS) in the RDSS bands. See An Inquiry Relating to Preparation for the International Telecommunication Union World Administrative

Radio Conference for Dealing with Frequency Allocations in Certain Parts of the Spectrum, 6 FCC Rcd 3900, 3908-09 (1991) ("WARC Inquiry Report"); AMSC Reply Comments in Response to Applications of Motorola Satellite Communications, Inc. ("Motorola") and Ellipsat Corporation ("Ellipsat"), at 7-8 & nn.8-9 (filed July 3, 1991). Among other bands, the Commission has proposed the 2110-2130/2160-2180 MHz bands for allocation to geostationary MSS (space-to-Earth) on a co-primary basis with existing services, and the 2390-2430 MHz band for geostationary MSS (Earth-to-space) on a primary basis.

If the Commission is willing to entertain AMSC's request for expansion of its proposed satellite system from 63 to 83 megahertz, it should require AMSC to specify a pair of frequency bands that is not encumbered with the RDSS-compatibility requirement of Proposed Footnote 733Z (see WARC Inquiry Report, 6 FCC Rcd at 3906, 3939), and that does not necessitate the preclusion of new and valuable global satellite services. Ironically, it appears that AMSC will have to rethink at least a portion of the allocation scheme recommended in its Petition as a result of the Commission's WARC Inquiry Report; AMSC's requested 1515-1525 MHz band for geostationary MSS (space-to-Earth) was not included on the list of proposed MSS allocations.

As a final matter on AMSC's claims of spectrum efficiency, TRW notes that AMSC's attempts to portray its

domestic generic MSS system as having the capabilities of the systems proposed for the RDSS bands falls short. The Global Positioning Service ("GPS") that AMSC claims it will provide in conjunction with its service (see AMSC Petition at 17) is not a substitute for the RDSS services that all of the other applicants in the June 3, 1991 processing group will provide. GPS is provided through government spacecraft (of the U.S. and other nations) in frequency bands outside of the L-Band frequencies proposed for use by AMSC. Not only would the continuing availability of these services be beyond the control of AMSC, it could very well require AMSC to rely on spacecraft of other nations. See AMSC Petition at 4 n.5, 15 (AMSC emphasizes benefits of U.S.-owned system; criticizes Motorola for contemplating foreign investment). Moreover, GPS is not a substitute for radiodetermination satellite services, which includes the possibility of ancillary data services in addition to radiolocation and radionavigation capabilities.

Similarly unavailing is AMSC's boast that the next generation of MSS satellites will have capabilities in terms of coverage footprints and transceiver size that will rival those proposed by some of the current RDSS-band applicants. It would be completely contrary to the public interest for the Commission to credit AMSC for such conjectural claims, much less allow AMSC to implement a system that would take at least two generations to achieve the state-of-the-art uses that are

pending today from the RDSS-band applicants whose system proposals would have to be rejected.

AMSC has clearly failed to propose an allocation scheme that is "spectrum efficient." If AMSC wants to consider expanding its proposed system, the Commission should require it to do so in frequency bands outside of the RDSS bands.

C. The Applications And Rulemaking Proposals Filed By TRW And Others For The RDSS Bands Will Revitalize The RDSS Service; The RDSS Allocations Should Be Preserved.

AMSC's assertion that there is no point to preserving an RDSS allocation is wrong. Clearly, TRW and the other applicants who have filed for authority to construct satellite systems in the RDSS bands demonstrate the continuing practicability of establishing satellite systems that include radiodetermination satellite services capability.

Authorization of one or more of these systems would allow the Commission's stated goals for the RDSS service to be achieved, as an essential component of an economically viable satellite services package. By contrast, grant of the non-competitive proposal advanced in AMSC's Petition -- whereunder the 1616.5-1626.5 MHz band would be reallocated to the domestic generic MSS and "assign[ed] to AMSC" (see AMSC Petition at 19) -- would require the Commission permanently to abandon its objectives for the RDSS service, and would

contravene its longstanding policy favoring competitive multiple entry in the satellite arena.

AMSC also interposes a general opposition to the waiver requests that were included in the Motorola and Ellipsat applications, stating that both applicants "have done nothing to demonstrate that there are circumstances unique to their applications which require a waiver." Id. (footnote omitted). AMSC suggests that the Commission should not address the waiver requests, and encourages it instead to "proceed by reallocating the spectrum to MSS and maximize the utility of the spectrum by assigning it to AMSC." Id.

AMSC's generalized opposition to the waivers requested by various applicants is completely unavailing, and provides no basis for the grant of AMSC's petition. TRW, for example, has requested certain rule waivers in order to allow voice services to be implemented in the 2483.5-2500 MHz band. However, TRW's operation in the 1610-1626.5 MHz band (the portion that overlaps with AMSC's requested allocation in the 1616.5-1626.5 MHz band) is technically compliant with the Commission's RDSS rules. By contrast, AMSC's proposal would not comply with the Commission's technical requirements for the RDSS service.

Rather than abandon the RDSS policy objectives by capitulating to AMSC's attempted spectrum grab, the Commission should embrace a policy that looks to revitalize the RDSS service in a manner that will enable services to be provided

economically into the next century. In this regard, TRW urges the Commission to reject AMSC's approach and, instead, to allocate spectrum for the "Mobile-Enhanced RDSS" (which would enable the implementation of several of the system proposals currently pending before the Commission) in the manner requested in TRW's Petition for Rule Making, RM-7773, filed July 8, 1991.

III. CONCLUSION

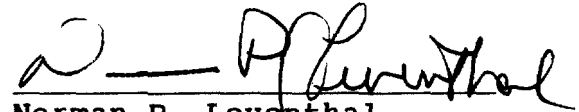
On the basis of the foregoing discussion, TRW urges the Commission to reject AMSC's proposal to reallocate the 1616.5-1626.5 MHz band from RDSS to MSS. AMSC's proposal advances only AMSC's interests, and does so at the expense of the public interest. If the Commission is to entertain AMSC's request for additional spectrum, it should first require AMSC to select frequency bands other than the RDSS bands that are proposed for use by TRW and the remaining members of the Commission's June 3, 1991 processing group. In no way should

the Commission allow AMSC's pecuniary desires to derail the beneficial and pro-competitive systems such as TRW's Odyssey.

Respectfully submitted,

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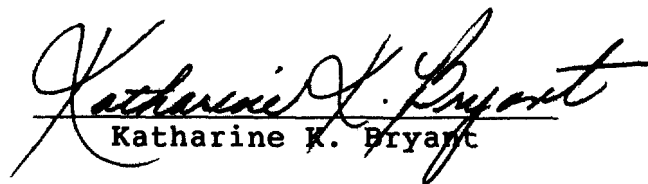
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CERTIFICATE OF SERVICE

I, Katharine K. Bryant, do hereby certify that a copy of the foregoing "Comments of TRW Inc." was mailed, first-class postage prepaid, this 16th day of October 1991, to the following:

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